REMARKS

1. The Examiner notes that he wasn't provided with an International Search Report (ISR). Applicant provides herewith a copy of the ISR along with copies of the references. Additionally, Applicant provides a copy of the PTO form 1449 submitted and the receipt from the USPTO showing that the ISR was timely submitted.

A further Information Disclosure Statement is submitted herewith, along with the 1449 Form and cited reference.

2. Provided herewith is a Declaration under 37 CFR §1.132 by the inventor, Linda J. Hockersmith. To establish the level of skill in the art and the general knowledge available to one having an ordinary level of skill, the inventor avers the following:

a. Dietary carbohydrates are utilized primarily for body fuel;
b. Insulin is a hormone that regulates carbohydrate mechanism;
c. The intestinal system has the ability to breakdown substantially one hundred percent of digestible carbohydrate;
d. The simplest form of carbohydrate is a monosaccharide, *e.g.* glucose;
e. The circulatory system has the ability to transport glucose to all body systems, especially the liver and muscle tissues;
f. Insulin produced by the endocrine system is required to transport glucose into liver and muscle cells;
g. Insulin production and utilization is unlimited in healthy individuals, explaining why indiscriminate carbohydrate intake in non-diabetic individuals results in fasting blood glucose concentration remaining in a relatively constant state between 70 – 126mg/dL.
h. In the diabetic state, blood glucose regulation is compromised; such compromise is the basis of the categorization of different types of diabetes
i. Those having Type 1 diabetes cannot produce insulin due to beta cell demise. Therefore they must take exogenous insulin to maintain life. The dose is often calculated at 1 unit of insulin/kg of bodyweight, and represents approximately 100 percent of their insulin requirement. If

exogenous insulin is not administered in the right dose or at the right time, a small amount of carbohydrate will cause blood sugar to move abruptly upwards. There is no endogenous insulin production and only residual insulin from a previous dose would be present to interact with the blood glucose, thus these individuals have a greater sensitivity to carbohydrate challenge;

j. Those having Type 2 diabetes have a mixed problem. Their insulin production may be impaired and their insulin utilization may be resisted. Thus, those having Type 2 diabetes may take exogenous insulin or medication to enhance insulin utilization because of their insulin resistant state. Because the mechanism of insulin utilization is impaired, many Type 2 individuals require >100% of the normal insulin requirement and often have large amounts of insulin in the blood at any one time. Generally, these individuals have a lower sensitivity to a carbohydrate challenge compared to a type I individual;

k. In either case, diabetes treatment is based upon identifying the type of diabetes and administering the proper dose of insulin or insulin-regulating medication to achieve control;

l. Control is defined as a premeal fasting glucose response of 70 – 140 mg/dL or a postprandial reading at approximately 2 hours of greater than 180 mg/dL. It can be measured with each carbohydrate intake, but is usually measured every three months by a glycosylated hemoglobin test (HbA_1C as an average of carbohydrate response;

m. High glycosylated hemoglobin levels are associated with poor control, which can usually be attributed to inadequate medication regimens; and

n. Poor control generally leads to greater sensitivity to carbohydrate challenge.

Additional support for the averments is provided by Exhibits A – G to the Declaration. The Inventor makes additional statements as described below in response to specific points raised by the Examiner in paper #7.

3. Applicant respectfully points out that Claim 14 and all Claims depending therefrom have been cancelled from the application, rendering all rejections as to the instant Claims under 35 USC §§ 112 and 102 moot.

4. Claims 1, 4 – 5, 8 – 12, 14, 17, 20 – 24, 26 and 31 – 33 stand rejected under 35 USC § 112, first paragraph as containing subject matter which was not described in the specification such as to convey that the inventor had possession of the Claimed Invention at the time of filing. Applicant has amended Claims 1 and 24 to describe the index as being based on "type of diabetes and/or level of diabetes control." Support for the amendment is found in the specification at page 13, line 22 to line 25. Thus, the rejection under 35 USC § 112, first paragraph is deemed overcome.

5. Claims 1, 3 – 5, 8 – 12, 14, 16 - 17, 20 – 24, 26, 28, 31 – 33, and 35 stand rejected under 35 USC § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

A. The Examiner first finds that Claim 35 doesn't teach all of the steps required to perform a method of generating a glycemic profile. Applicant respectfully disagrees. At page 6, line 6 to line 13, Applicant teaches:

"A test subject's blood glucose levels are actively controlled or manipulated through the oral ingestion of carbohydrate foods and the administration of rapid-acting insulin in such a way that the patterns of the targeted glycemic profile of Figure 1 are reproduced by the subject's own glycemic profile during successive calibration visits. Thus, since the subject's blood glucose level is under active control, the influence of other sampling factors on the reference values is greatly reduced or eliminated" (emphasis added).

Claim 35 describes steps of:

"driving said subject's blood glucose concentration to a target maximum through oral ingestion by said subject of a calculated amount of carbohydrate required to achieve said target maximum;

monitoring said individual's blood glucose concentration at predetermined time intervals; and

driving said subject's blood glucose to a target minimum through administration of a hypoglycemic agent;

wherein rate of change of said glucose concentration substantially corresponds to a target rate; and

wherein a resulting glycemic profile is uncorrelated to factors other than subject's blood glucose concentration."

Thus, Claim 35 describes actively controlling the subject's blood glucose level to eliminate the influence of other sampling factors on the subject's glycemic profile.

B. The Examiner next states that glycemic profiles are generally correlated to blood glucose concentration and not to other factors. Applicant respectfully disagrees. At page 5, line 32 to page 6, line 1, Applicant teaches:

"Generating such a calibration requires reference blood glucose values that are uncorrelated to sampling factors such as skin temperature, environmental temperature, time of day, and other blood analytes" (emphasis added). Thus, a glycemic profile not under active control is subject to a host of environmental and physiological influences in addition to blood glucose concentration. Thus, the Examiner's finding is in error.

C. The Examiner next states that Claim 1 does not describe units, which would render the calculation difficult. As Applicant explained in the previous response, and as the Inventor avers in the enclosed Rule 132 Declaration, blood glucose concentration is nearly universally expressed in mg/dL, or alternately mM, a fact that would be readily understood by one having an ordinary level of skill in the art. Furthermore, in determining definiteness of Claim language, the Examiner's focus "is whether the Claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available." "Definiteness of Claim language must be analyzed ...in light of:

[A] The content of the particular application disclosure;

[B] The teachings of the prior art; and

[C] The Claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made" (MPEP 2173.02, emphasis added].

D. The Examiner next states that the Claims do not explain how starting and target blood glucose concentrations are obtained or calculated. At page 7, line 6 to line 8, Applicant teaches:

"Throughout the duration of each calibration visit, the subject's blood glucose level is measured at regular intervals using conventional invasive methods. Concurrently, noninvasive spectral measurements are taken."

As the Inventor avers in the enclosed Rule 132 Declaration, such methods for making glucose determinations would be known to one having an ordinary level of skill.

Additionally, based on Figures 1 and 2 of the application and the accompanying description, one skilled in the art would readily appreciate that the target glucose concentration could be dictated by the idealized glycemic profile. Furthermore, the invention is not directed to establishment or selection of target values, but rather how to achieve a target value. Thus, failing to explain a criterion or rationale for establishing or selecting the target values does not render the Claim indefinite.

Applicant has amended Claims 1 and 24 to describe X as an "assigned value" based on "type of diabetes and level of diabetes control." Support for the amendment is found in the specification at page 13, line 22 to line 25. Thus, as the Inventor avers in the enclosed Rule 132 Declaration, one having an ordinary level of skill would understand that X constitutes an index value, assigned by a clinician according to the objective criteria: type of diabetes, and level of diabetes control. Thus, X is not a calculated value, but an assigned value, based on the clinician's knowledge of a plurality of objective criteria.

E. Claim 4 has been cancelled from the application. Claim 5 has been amended to correct its dependency.

F. Claim 1 has been further amended to describe the calculation step as "estimating said required amount of carbohydrate" and "X comprises an assigned value representing an estimate of said subject's sensitivity to carbohydrate..." Claim 8 has been amended to reflect the change to Claim 1; Claim 9 has been amended to describe the "second amount" as an "actual amount." Thus, one having an ordinary level of skill in the art would understand that the amount calculated in Claim 1 is a mere estimate, and that in Claim 8, X is customized to the subject, and that in Claim 9, an actual, rather than an estimated amount is calculated, based on the individualized value of X. Claims 24 and 31 have been similarly amended.

G. Claim 12 has been amended to correctly describe the glycemic profiles as "anti-correlated." Applicant believes that, in view of the description of calibration models provided in the specification at page 1, line 30 to page 2, line 26, the subject matter of Claim 12 is distinctly claimed and particularly pointed out.

H. The Examiner's findings with respect to Claim 14 and all Claims depending therefrom are rendered moot by the cancellation of Claim 14 from the application.

Accordingly, the rejections 35 USC § 112, second paragraph are deemed overcome.

6. Claims 1, 3 – 5, 8 – 12, 16, 24, 26, 28, 31 – 33 and 35 stand rejected under 35 USC § 112, first paragraph as based on a disclosure which is not enabling. Applicant respectfully disagrees.

A. The Examiner first finds that the selection of a target maximum and a target minimum are critical to determine the rate of change of glucose concentration. Applicant respectfully disagrees. The target rate of change is established by the target glycemic profile: "The targeted glucose profile's rate of change is ±1.33

(mg/dL)/minute" (page 12, line 6, emphasis added). Applicant also disagrees with the Examiner's apparent finding that a description of the manner of selecting the targets is critical to the invention. As shown in Figures 1 and 2, and the accompanying description, the targets may be specified by the idealized glycemic profile. In addition, the targets might be arbitrarily chosen. As Applicant has pointed out *supra,* the invention is concerned with shifting glucose concentration, not with selection of targets.

As amended, Claims 1 and 24 describe X as being an assigned value, thus it is unnecessary to describe its manner of calculation. What is more, Applicant believes the specification to be enabling as to the assignment of the value of X. The specification and the Claims describe X as having a range of approximately 1 to approximately 3.

One having an ordinary level of skill, based on the knowledge generally available in the art, as described by the Inventor in the enclosed Rule 132 Declaration, and further based on the data provided by tables 1 and 4 of the application would understand that type 2 diabetics, such as subjects 1 – 3, 5 – 7 and 9 – 10, having a relatively lower sensitivity to carbohydrate would be assigned a relatively lower value of X, 1 for example. Type 2 diabetics, such as subject 4 will have a relatively higher sensitivity to carbohydrate challenge, and would be assigned a higher value of X, 2 for example. The subject's Hba1c value constitutes an additional factor that affects carbohydrate sensitivity. Thus, for example, a type 1 diabetic having a high value for Hba1c, such as subject 8, would have an even greater sensitivity to carbohydrate challenge, and would therefore be assigned a value of 3, for example.

Such numerical indices are known in the healthcare field. For example, there exists a system for informally assessing an individual's risk of developing heart disease, in which the individual tallies their number of risk factors. Tumors are staged using a numerical index that denotes the severity of the tumor. Swelling is informally assessed by characterizing it as 1+, 2+, 3+, and so on. None of these values are

calculated. Rather, they are assigned by clinicians according to definite criteria, as in the Claimed Invention.

7. Claims 1, 3 – 5, 8 – 12, 24, 26, 28, 31 – 33 and 35 stand rejected under 35 USC § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Applicant respectfully disagrees.

A. The Examiner finds that the invention is directed to development of an optimal glycemic profile. Applicant respectfully disagrees as to Claims 35 and 24. Claim 35 is directed to generating a glycemic profile having a predetermined shape. Claim 24 is directed to calculating a required amount of carbohydrate to achieve a shift in blood glucose concentration from a starting concentration to a target maximum. As Applicant has explained above, X is an assigned value that is based on a clinician's assessment of factors that determine an individual's sensitivity to carbohydrate challenge. While X_i is a calculated value, Applicant disagrees with the Examiner's finding that one having an ordinary level of skill would not be able to calculate X_i based on expression 4 (page 14, line 1) and the description of page 13, line 23 to page 14, line 11.

Applicant respectfully notes that the expression

$$CHO = \frac{TARGET - STARTING}{X}$$

has not been described as an equation or a mathematical expression. Rather, it has been presented as a formula, a "method allowing little room for originality." Collegiate Dictionary, 10th ed. Merriam-Webster (1998). Thus, the formula summarizes steps to be followed in determining an amount of carbohydrate. While some of the steps involve calculation, it is unnecessary that the formula reduces or balances because it is not a mathematical expression. Applicant notes that the specification, at page 10, line 2 to page 14, line 15 provides a detailed description of a working example employing the expression and the use of X to determine the

required amount of carbohydrate. Applicant also notes, as does the Inventor, in the enclosed Rule 132 Declaration, that the ordinary level of skill in the art is high, thus the description is enabling to one having an ordinary level of skill in the art.

B. The Examiner notes that Table 4 has no units. However, as previously described, X is an assigned value that has no units. Based on description of preceding pages, *e.g.* page 10, line 7, one having an ordinary level of skill would recognize that CHO intake would be expressed in grams, and Glucose Excursion would be expressed either in mg/dL or mM.

C. The Examiner finds that the specification does not teach how to optimize insulin, as described on page 15. One having an ordinary level of skill in that art would immediately understand how to use the invention to optimize an individual's insulin dose, based on the description in the preceding pages. Nevertheless, the point is moot, because Applicant doesn't claim this particular point of novelty. Furthermore, the Examiner's statement that the method lacks novelty has no place in an enablement analysis, and is therefore in violation of MPEP § 707.07(d).

D. The Examiner finds that the specification does not describe how to produce blood glucose values uncorrelated to sampling factors such as skin temperature, time of day, etc. Applicant respectfully disagrees. Page 6, line 6 to line 11 teaches:

"A test subject's blood glucose levels are actively controlled or manipulated through the oral ingestion of carbohydrate foods and the administration of rapid-acting insulin in such a way that the patterns of the targeted glycemic profiles of Figure 1 are reproduced by the subject's own glycemic profile during successive calibration visits. . . " (emphasis added).

The remainder of the specification provides detailed instructions for achieving such active control.

E. The Examiner finds that a method of calibrating a noninvasive blood glucose monitor using blood glucose reference values in which correlation to sampling factors previously mentioned is greatly reduced or eliminated is not set forth. Applicant respectfully disagrees: the method is set forth at page 6, line 17 to line 26.

Based on the description provided and the knowledge generally available to one having an ordinary level of skill, the description is enabling. However, even it weren't, the point would be moot because Applicant hasn't Claimed the method described.

F. The Examiner finds that target values such as those set forth in the last paragraph of page 8 are critical to the invention. Nowhere in the description has Applicant asserted that particular target values are critical to the invention. The invention involves target values, not particular target values. The target values could be selected according to predetermined criteria, or they could be arbitrary values. Thus, failing to provide an explanation of the significance of the target values does not render the description non-enabling.

G. Regarding the noninvasive and invasive measurements of blood glucose on page 9: one having an ordinary level of skill would immediately recognize that a set of noninvasive measurements and a corresponding set of reference measurements are done to generate the calibration described at page 6, line 24 to line 26.

H. Regarding the A1C values in Table 1 on page 9: an explanation of how the present invention would relate to subjects with good glucose control is not required for an understanding of the invention. As the inventor explains in the enclosed Rule 132 Declaration, one skilled in the art would readily appreciate the applicability of the Claimed invention to a cross-section of subjects, based on the description.

I. Regarding Table 2: the Examiner finds that no method of treatment was set forth. Applicant respectfully disagrees. The method of treatment is described from page 8, line 28 to page 9, line 8.

Applicant also disagrees that the specification does not teach how the treatment was designed to achieve those values. Page 7, line 10 to line 16 teaches:

"The subject is fed either carbohydrate rich meals to produce a glucose excursion, or low-carbohydrate meals to promote a drop in blood sugar level. The amount of carbohydrate to be ingested in calculated according to an inventive

formula, described in greater detail below. The formula, based on a current glucose level, a target glucose level and the subject's sensitivity to carbohydrate, utilizes a novel numerical index to quantify carbohydrate sensitivity" (emphasis added). The actual description of the formula starts at page 10, line 3 of the specification.

J. Rate of change: the Examiner questions how the rate was determined and its significance. Applicant provides an enabling description of how to produce a target rate of change, not how to produce a specific rate of change. The rate of change may be selected according to some criterion, or it may be arbitrary; given the scope of the Claimed invention, failure to explain any criteria for selecting one rate of change over another does not render the description nonenabling. Furthermore, the description of the experimental design at page 6, line 38 to page 7, line 4 specifically says the targeted profiles of Figures 1 and 2 will be used. One skilled in the art, considering the symmetry of the upward and downward curves of the profiles depicted in Figure 1, would understand that the negative and positive rates of change would be similarly symmetrical. The significance of the Table 3 data is explained in detail, at least at page 13, line 10 to line 13:

"The results indicate that administering a calculated amount of carbohydrate can be used to achieve anti-correlated glucose patterns. Type 2 individuals are less sensitive to carbohydrate excursion and require two to three times the amount of carbohydrate of that of type I individuals" (emphasis added).

Applicant disagrees that the description does not teach how to customize the test. Pages 13 and 14 describes how to calculate an individualized value of X, X_i

K. Applicant respectfully notes that prior art approaches, such as glycemic index, were discussed in the 'Description of Prior Art." Applicant disagrees that no mention was made of the type of carbohydrate consumed. Applicant teaches at page 7, line 16 to line 17:

"Meals are composed of carefully selected, conventional foods and beverages." Because such approaches as glycemic index and glycemic load have

been extensively discussed in the Description of Prior Art, one having an ordinary level of skill would readily understand that the current invention is unconcerned with them, as the inventor notes in her Rule 132 Declaration.

L. Regarding the insulin dosing regimen: As the inventor notes in her Rule132 Declaration, exogenous insulin has been in use since the early 20th century, and there exists a substantial body of knowledge relating to its use. Accordingly, one having an ordinary level of skill would readily be able to devise a more aggressive dosing regimen with a minimum of experimentation, given the present level of knowledge available and the high level skill in the art.

M. As above, the Examiner finds that the exemplary values employed in the description are critical to the Invention. Applicant respectfully disagrees. The exemplary values are set forth in a section of the description clearly labeled "Experiment:" (page 8, line 11). A general description of the invention is provided at page 5, line 30 to page 8, line 9 that is not dependant on specific values. Additionally, at page 15 line 17 to line 21, the description notes:

"Although the invention has been described herein with reference to certain preferred embodiments, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing from the spirit and scope of the present invention."

8. The Examiner finds that the intended invention may be a method of elevating glucose from a starting value to a selected target value by administering an amount of carbohydrate determined by some formula. Applicant respectfully disagrees.

As described below, Claim 35 describes a method of generating a glycemic profile in a subject having a predetermined shape, wherein the shape is determined by target maximum, target minimum and target rate of change.

Claims 14 describes a method of elevating glucose from a starting value to a selected target value that utilizes a formula based on an index indicative of the subject's carbohydrate sensitivity.

9. Claim 35 stands rejected under 35 USC § 102(b) as being anticipated by each of Galen, Volpicelli, and Liszka – Hackzell. Applicant respectfully disagrees.

Regarding Galen: Galen is unconcerned with generating a glycemic profile in a subject having a predetermined shape, the shape determined by a target maximum, a target minimum, and a target rate of change. Galen merely teaches what is widely known, that it is desirable for diabetics to maintain their blood glucose within a healthy range, the high and low boundaries of the range presumably determined by the values listed on Col 4. It is only by inducing shifts substantially at the required rate of change that one is able to achieve a resulting glycemic profile that is uncorrelated to factors other than subject's blood glucose concentration.

Regarding Volpicelli: Volpicelli teaches a method of forcing an OGTT glycemic curve to remain within the normal range though oral administration of carbohydrate and administration of insulin. The object of the method is to study insulin resistance by quantifying the amount of insulin required to maintain the glycemic profile within the normal range. Thus, Volipicelli uses insulin and carbohydrate to maintain the subject's glycemic curve about a steady state.

In stark contrast, the invention drives the subject's glycemic profile to a target maximum, and then to a target minimum. There is no teaching in Volpicelli of driving said subject's blood glucose concentration to a target maximum through oral ingestion by said subject of a calculated amount of carbohydrate. Nor does Volpicelli teach driving said subject's blood glucose to a target minimum through administration of a hypoglycemic agent. Volpicelli teaches maintenance of a steady state through the use of orally administered carbohydrate and exogenous insulin.

Furthermore, Volpicelli does not teach a resulting glycemic profile that is uncorrelated to factors other than subject's blood glucose concentration. As Volpicelli explains at page 34, Col. 1 to Col. 2, the reference values for the normal curve were for two separate age ranges. Thus, the target profile, and the resulting glycemic profiles, are correlated at least to age group. Furthermore, in attempting to improve reproducibility, Volpicelli, standardizes such parameters as period of fasting, time of test, ambient temperature, as well as individual characteristics such as time of menstrual cycle. While such standardization improves reducibility, it also establishes strong correlations to those factors in the resulting glycemic profile.

Regarding Liszka-Hakzell: As above, Liszka-Hakzell is unconcerned with generating a glycemic profile in a subject having a predetermined shape, the shape determined by a target maximum, a target minimum and a target rate of change. Rather, Liszka-Hakzell describes the application of an artificial intelligence algorithm to the conventional task of maintaining a subject's blood glucose within a desirable range. It is only by inducing shifts substantially at the required rate of change that one is able to achieve a resulting glycemic profile that is uncorrelated to factors other than subject's blood glucose concentration.

Accordingly, the rejections of Claim 35, and all Claims depending therefrom under 35 USC § 102(b) are deemed to be improper.

10. Claim 14 stands rejected under 35 USC § 102(b) as being anticipated by each of Galen, Volpicelli, and Liszka – Hackzell. Applicant has cancelled Claims 14, 16, 17 and 20 - 23 from the application, rendering the rejection of Claim 14 under 35 USC § 102(b) and all Claims depending therefrom moot. Applicant cancels Claim 14 without prejudice solely for the purpose of expediting prosecution of the application. Cancellation of Claims 14 – 23 is not to be taken as Applicant's agreement with the Examiner's finding. Applicant expressly reserves the right to pursue patent protection for the cancelled subject matter in a future application.

11. Claim 24 stands rejected under 35 USC § 102(b) as being anticipated by each of Galen, Volpicelli, and Liszka – Hackzell.

Regarding Galen: The teachings from Galen cited by the Examiner describe conventional methods of managing a diabetic condition, and describe typical ranges and values for various blood analytes that are seen in both healthy and diabetic subjects. The invention describes a method for calculating an amount of carbohydrate to ingest to produce an elevation in blood glucose concentration from a starting value to a target value that employs an index of carbohydrate sensitivity, based on type of diabetes, and level of diabetes control. There is no such teaching in Galen.

Regarding Volpicelli: As described above, Volpicelli teaches a method of forcing an OGTT glycemic curve to remain within the normal range though oral administration of carbohydrate and administration of insulin. The object of the method is to study insulin resistance by quantifying the amount of insulin required to maintain the glycemic profile within the normal range. The Claimed invention is unconcerned with insulin resistance, or maintenance of a glycemic profile about a steady state.

12. Claim 35 stands rejected under 35 USC § 102(a) as being anticipated by U.S. Patent No. 5,956,501 ("Brown"). Applicant respectfully disagrees. Brown describes a system and method for predicting the effect of patient self-care actions on a disease control parameter. As with the previous references, Brown has the object of maintaining a subject's blood glucose level within a healthy range. Brown is unconcerned with generating a glycemic profile in a subject having a predetermined shape, the shape determined by a target maximum, a target minimum and a target rate of change. It is only by inducing shifts substantially at the required rate of change that one is able to achieve a resulting glycemic profile that is uncorrelated to factors other than subject's blood glucose concentration.

13. Claim 24 stands rejected under 35 USC § 102(a) as being anticipated by U.S. Patent No. 5,956,501 ("Brown"). Applicant respectfully disagrees. The Examiner points out that Brown teaches the use of insulin sensitivity to calculate how much a unit of insulin expected to lower glucose level. The invention is unconcerned with insulin sensitivity. Insulin sensitivity is a quantitative expression

that describes how much insulin a subject actually requires to control their diabetes as opposed to an idealized dose for a diabetic having the same body weight as the subject. In stark contrast, the invention describes a method for calculating an amount of carbohydrate to ingest to produce an elevation in blood glucose concentration from a starting value to a target value that employs an index of carbohydrate sensitivity, based on type of diabetes, and level of diabetes control. Brown contains no such teaching. Accordingly, the rejection under 35 USC § 102(a) of Claim 24 and all Claims depending therefrom is deemed improper.

14. Claim 35 has been amended to harmonize it with the written description to describe "wherein correlation of a resulting glycemic profile to factors other than subject's blood glucose concentration is diminished or eliminated." Support for the amendment is found in the specification at page 5, line 30 to page 6, line 15.

CONCLUSION

In view of the above, the Claims are deemed to be in allowable condition. As such, the Examiner is earnestly requested to withdraw all rejections and allow the Application to pass to issue as a U.S. Patent. Should the Examiner have any questions regarding the Application, he is urged to contact Applicant's attorney at the telephone number given below.

Respectfully submitted.

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AMENDMENT (MARKED-UP COPY)

In the Claims:

1. (Twice Amended) A method as in Claim 35, further comprising the step of:

[calculating] estimating said required amount of carbohydrate according to a formula, said formula comprising:

$$CHO = \frac{TARGET - STARTING}{X},$$

where CHO represents said required amount of carbohydrate, $TARGET$ represents said target maximum, $STARTING$ represents a starting blood glucose concentration, and X comprises an [index] assigned value representing an estimate of said subject's sensitivity to carbohydrate, said [index] assigned value based on [said subject's diabetic status and ease with which said status is controlled] type of diabetes and/or level of diabetes control.

5. (Twice amended) The method of Claim [4] 1, wherein X is from a range of approximately 1 to 3, wherein 1 represents low carbohydrate sensitivity and wherein 3 represents high carbohydrate sensitivity.

8. (Twice amended) The method of Claim 1, further comprising the step of:

individualizing X to said subject based on an actual elevation of blood glucose concentration resulting from ingesting said estimated amount of carbohydrate according to:

$$X_i = \frac{OBSERVED - STARTING}{CHO},$$

where observed represents an actual blood glucose value achieved following ingestion of said [calculated] estimated required amount of carbohydrate, wherein X_i represents an individualized value of X.

9. (Twice amended) The method of Claim 8, further comprising the step of:

calculating [a second] an actual required amount of carbohydrate using X_i, wherein said [second] actual amount comprises amount required by said subject to achieve elevation of said subject's blood glucose concentration to said target maximum.

10. (Twice amended) The method of Claim 9, further comprising the step of:

ingesting said [second] actual required amount of carbohydrate by said subject.

12. (Twice amended) The method of Claim 10, further comprising the step of:

generating an individualized calibration model for said subject for use in non-invasive methods of blood glucose determination employing spectroscopic instrumentation based on idealized anti-correlated glycemic profiles produced using said formula

24. (Twice amended) A method of predicting a required amount of carbohydrate to ingest to produce an elevation in blood glucose concentration in a subject from a starting value to a target maximum, said method comprising the steps of:

providing said target and starting values; and

[calculating] estimating said required amount of carbohydrate according to a formula, said formula comprising:

$$CHO = \frac{TARGET - STARTING}{X},$$

where CHO represents said required amount of carbohydrate, $TARGET$ represents said target maximum, $STARTING$ represents a starting blood glucose concentration, and X comprises [a generalized index] an assigned value representing said subject's sensitivity to carbohydrate, said [index] assigned value based on [said subject's diabetic status and ease with which said status is controlled] on type of diabetes and/or level of diabetes control.

31. (Twice amended) The method of Claim 24, further comprising the step of:

individualizing X to said subject based on an actual elevation of blood glucose concentration resulting from ingesting said [calculated] estimated required amount of carbohydrate according to:

$$X_I = \frac{OBSERVED - STARTING}{CHO},$$

where *OBSERVED* represents an actual blood glucose concentration achieved following ingestion of said estimated required amount of carbohydrate, and X_i represents said individualized value of X.

35. (Amended) A method of generating a glycemic profile in a subject having a predetermined shape, comprising the steps of:

driving said subject's blood glucose concentration to a target maximum through oral ingestion by said subject of a calculated amount of carbohydrate required to achieve said target maximum;

monitoring said individual's blood glucose concentration at predetermined time intervals; and

driving said subject's blood glucose to a target minimum through administration of a hypoglycemic agent;

wherein rate of change of said glucose concentration substantially corresponds to a target rate; and

wherein correlation of a resulting glycemic profile [is uncorrelated] to factors other than subject's blood glucose concentration is diminished or eliminated.

Please cancel Claims 4, 14, 16, 17 and 20 – 23 from the application without prejudice.